



NEED ANALYSIS: EDUCATION FOR SUSTAINABLE DEVELOPMENT IN TEACHER EDUCATION

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Abstract

Education for Sustainable Development (ESD) is about making education better in quality, more relevant and more responsible. It is for providing learners with the tools and techniques needed to deal effectively with contemporary challenges in this unstable world. It encourages people to be innovative, think critically, solve problems, understand complexity and cooperate with others. ESD promotes life-long learning and inter-disciplinary education. It gives priority to equal education for girls and women at all levels. Thus, the vision of ESD is that of transforming education systems so that they can help to build a better future.

Teachers play a key role in the socialization of young people for sustainable development. One cannot ignore the position of teacher and teacher training programmes in environmental perspectives. It is the responsibility of teachers and prospective teachers to sensitize their students and the public at large about important issues related to environment and sustainable development. To transform education systems, it is essential that teacher must have all the required skills, attitudes and values related to ESD. For this, it is important to know the requirement of prospective teachers. Present paper deals with the need analysis of the probable teachers in the area of ESD.

Key words- Sustainability, HNB Garhwal University, Pupil teachers.



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In 1983, UN General Assembly established a world commission on environment and development. Brundtland chaired this commission and its final report was published as "Our Common Future". In this report, the term 'Development' was refined and was supposed to be environment conservator and in this process, a new term, Sustainable Development (SD) was coined.

SD means such a development where, along with the needs of present generation, needs of future generation are also kept in concern. It was also emphasized that priority should be given to the needs of poor people of the world. The view of limitation was also suggested which means that natural resources should be used in a limited manner so that along with the

present needs, future needs can also be fulfilled. Commission also emphasized on the integration of environmental and economical decisions.

The Earth Summit (The UN Conference on Environment and Development in 1992) in its Agenda 21 emphasized the role of education in creating and nurturing sustainable communities. The Johannesburg Summit in 2002 re-affirmed the importance of education in achieving the Millennium Development Goal of international co-operation to promote strategies for SD. Then in December 2002, the United Nations General Assembly declared the period from 2005 to 2014 the Decade of Education for Sustainable Development (DESD). Education for Sustainable Development (ESD) is an approach towards the re-orienting of education systems, educational institutions and teaching-learning processes so that they become increasingly consistent with the principles of sustainable development. ESD rests on two key assumptions first, the crises we face in finance, economy, food, energy, climate change and social tensions are much more than technical and political challenges. To resolve them, it is not enough to develop smarter technologies or stronger regulations. We have to change the fundamental attitudes and beliefs that guide our behavior. We need a change in values towards greater solidarity and respect for each other and our planet. Second, the most effective way to change the values is through education, but this also requires changes in education. ESD is associated with environment, economics and society. It develops skills, values and attitudes for a sustainable life, which motivates and directs people. It motivates people for the co-operation in a democratic society. Changes in the areas of transforming curricula and learning materials in formal education at all levels, reforming non-formal education, especially for adults, making learning systems more flexible and responsive to the changing needs, providing new skills and opportunities, improving the pre-service and in-service training of teachers so that they can guide learners, young and old alike, on how to live more sustainably are required. To attain sustainability, required knowledge, skills and issues should be added in the existing curriculum. Such reforms should be made in the education system, which helps in the attainment of sustainability. The principal objective of the decade of “Education for sustainable development” was to integrate the principles, values and working system of sustainable development with all the aspects of education and learning. The role of schools and teachers are of utmost importance in this education, because such an education can only be imparted in those schools and institutions where a person gets his/her formal education. To connect the education for sustainable development with this formal education, had been the main objective of this decade.

Various discussions have been conducted on the different aspects of ESD viz. the learning content, pedagogy and learning environments, societal transformation and learning outcomes etc. Learning content includes integrating critical issues as climate change, biodiversity, disaster risk reduction and sustainable consumption and production, into the curriculum. Pedagogy and learning environments incorporates designing teaching and learning in an interactive, learner-centered way that enables exploratory, action-oriented and transformative learning, rethinking learning environment, physical as well as virtual and online to inspire learners to act for sustainability. Societal transformation deals with empowering learners of any age, in any education setting, to transform themselves and the society they live in and enabling a transition to greener economics and societies. It also equips learners with skills of ‘green jobs’ and motivating people to adopt sustainable lifestyles. Empowering people to be ‘global citizens’ who engage and assume active roles, both locally and globally, to face and to resolve global challenges and ultimately to become proactive contributors to creating a more just, peaceful, tolerant, inclusive, secure and sustainable world. Learning outcomes can be measured by stimulating learning and promoting core competencies, such as critical and systematic thinking, collaborative work, decision making and taking responsibility for present and future generations.

ESD is about the learning needed to maintain and improve our quality of life and the quality of life of generations to come. It enables people to develop the knowledge, values and skills to participate in decision about the way we do thing individually and collectively, both locally and globally, that will improve the quality of life now without damaging the planet for the future (sustainable development education panel report, 1998). While, discussing the importance of global sustainability, American president Barack Obama told that through education, we can eradicate poverty by connecting maximum of the people, can empower women, can provide better opportunities to our youth. We can develop a healthy society and can also motivate an AIDS free generation.

We can’t imagine a sustainable nation without the contribution of teachers. Teachers can contribute abundantly to sustainable development (Guidelines and recommendation for reorienting teacher education to address sustainability, 2005). In this document, only one aspect ‘Teacher Education’ is highly focused. To address sustainability, we should focus specifically on the contribution of teacher education institutions and training teachers, future leaders and educationalists. The national curriculum framework for teacher education NCFTE, 2009 has emphasized on sustainable development and stated, teachers are required

to understand the need of its integration and implementation in the new teacher education curriculum framework.

Researches have been conducted on environmental education in teacher education (Sharan, 1982; Rane, 1989; Shahnawaj, 1990; Sahoo, 1992; Scoulllos, 1999; Ravindranath, 2006; 2007; Sarabhai, 2005 and Dhawan, 2008; 2012). Das (2010) reported that 60% pre-service and in-service teachers believe that existing teacher training program doesn't help in giving the information related to the concept of sustainable development. 75% pre and in-service teachers feel the need of a program that can aware them about the concept of sustainable development. 80% teachers believe that required modifications should be made in the existing curriculum regarding assumptions related to environmental education and sustainable development.

The challenge is how to build the capacities of teachers, to initiate and enhance SD-inspired forms of learning in schools, universities, workplaces and neighbourhoods. Most likely, competent teachers can be prepared through well-designed training programs that immerse them in real-world experiences related to ESD where they are challenged to excel. A training programme can be successful only, if it results in gaining some knowledge and skills which will increase the effectiveness and quality of the education. Therefore, to make the training programme effective, analysis of the needs of teachers in ESD is essential. Realizing the significance of teachers' knowledge and skills in ESD, a study was conducted for need analysis. The main objective of the study was to analyze the needs of prospective teachers in ESD to excel in the area.

Methodology

Qualitative research method was applied to analyze the needs of prospective teachers in ESD. Data was collected through focus group discussion on different aspects of ESD. 50 prospective teachers of HNB Garhwal University have been selected through purposive sampling method. 5 groups consisting of 10 students each were made. The discussions were lead by the moderator/researchers. Discussion was skillfully coined on the areas related to sustainable development such as need of Environmental Education, ESD, role of teacher, school, women and Society in ESD, curriculum for ESD, training for ESD and areas in which training is required. The entire session of group discussion was videotaped to see later during interpretation. Prospective teachers were very motivated and discussed all the subjects and gave important suggestions. The responses obtained were studied minutely and were reduced by combining the similar responses. In addition, a questionnaire consisting 12 statements was used to collect the opinion of pupil teachers related to importance of ESD for a teacher, need

of ESD component in the curriculum, requirement of training and courses for pupil teachers related to ESD and barriers in teacher education institution for the development of ESD.

Result:

The area wise some of the responses obtained are described below.

Need of Environmental Education

Responses

- There are number of problems like climate change, deforestation, cleaning of river Ganga, for which environment education should be given.
- Society is adapting western culture and this is harming our environment.
- To aware women and society (women are appointed as member of van panchayat but they have no idea why have they been there. This is why, van panchayat and government should give environmental education to women).
- We are harming our nature which is causing low production in agriculture because of this, our farmers to commit suicide.
- In ancient times, man didn't used to harm nature and there was a balance in environment.

Need of Education for Sustainable Development.

Responses

- Resources are not used in correct manner. They are being misused in large amount.
- Water resources are limited
- Van panchayat doesn't provide any useful information related to natural resources.
- People are cutting entire tree just for little wooden needs.
- There should be an emotional bond between nature and students
- Rural people should be included in policies which are made to prevent migration due to dam construction.
- In process of production of light, numbers of people have to migrate from their place, so we should save light.
- Solar energy, wind energy should be used more.
- Useful product should be made from waste material.
- Bio-diversity should be conserved.
- For climate change.
- Bio production should be promoted.

Role of Teacher in ESD

Response

- Teachers can go to rural areas and aware children and rural people.
- Teachers should make maximum efforts at his level.
- Teachers should use variety of methods.
- Teachers can aware students better by giving real examples.
- Can include parents in forestation.
- They can give rewards to students.
- Teachers should be an ideal personality whom students can follow.

Role of School in ESD

Response

- Urban students should be given the work of plantation.
- Students should do those works which they can do at their level.
- Make visit to zoo and centuries so that they can contribute to wild life conservation.
- Students should develop as a miniature of environment. For this, some of the area of school should be given to the students.

Role of Society in ESD

Response

- Education and knowledge related to sustainable development should be given by government representative in the meetings of van panchayat.

Role of Women in ESD

Response

- Ritual of planting after marriage should be promoted. They should be told about the importance of forest
- Most of women stay at home, so they should develop orchard and kitchen garden at home and they should also tell its importance to their children.
- Rural women are more sensitive towards environment. They should be given appropriate information.
- Children get their values from mother. They should inculcate good habits in children.

Curriculum for ESD

Response

- Environmental education should be included in curriculum.
- Information of renewable resources should be included.
- Experimental approach should be used.
- Value education should be included in curriculum.
- Experimental and practical knowledge should be given.
- Importance of natural resources and how they are beneficial for future.

Importance of Training for ESD

Response

- Training is required to know about natural resources.
- To know the skills required for environmental education.
- Training is also required to aware women, to develop values, to aware children, to develop knowledge and awareness related to environment.

Areas in which training is required

This is the main issue of the entire discussion. Following are the key points which came up by the discussion:

Responses

S.N.	Dimension	Areas
1.	Environmental	Biodiversity Knowledge of renewable energy sources Environmental problems Environmental conservation
2.	Political	Political development and political feeling.
3.	Cultural	Encouragement of cultural diversity Village development Inclusion of local community in development polices
4.	Economical	Commercial training In the field of development of economical backward people Self employment and alternative of employment.
5.	Social	Personality development and social issues. Language diversity Social problem Food security Skill development for individual for social problems Demand for respect to all Equal opportunity on the basis of capacity Training for Middle class family and basic need. Backward class of society Democratic society and protection of human welfare Social welfare Gender equality Ethics

		Peace
6.	Knowledge	Sustainable development Education for sustainable development Objectives of ESD Skills for ESD Pedagogy for ESD
7.	Capacity Building	Professional ethics Development of moral values Quality in education Make self dependent
8.	Skills	Critical thinking communication creative thinking collaboration constructive problem solving

Opinion/response of pupil teachers

S.N.	Areas	High%	Average %	Low%
1.	Importance of sustainable development for a teacher	67.65	32.35	0
2.	Importance to add sustainable development component in the curriculum	32.35	63.23	4.41

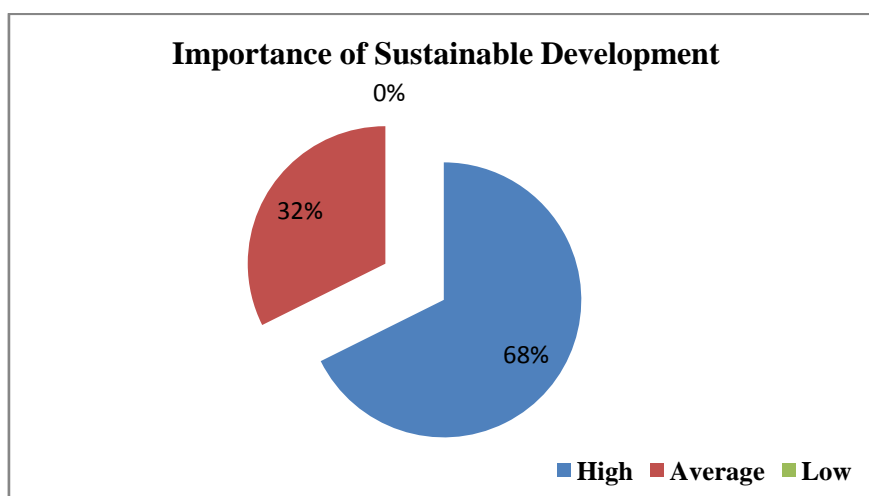


Fig.-1: Response of Pupil Teachers for Importance of SD

It is interesting to find that 100% of pupil teachers accepted that knowledge of sustainable development is important for a teacher, 68% of them shown high level of acceptance (fig.-1).

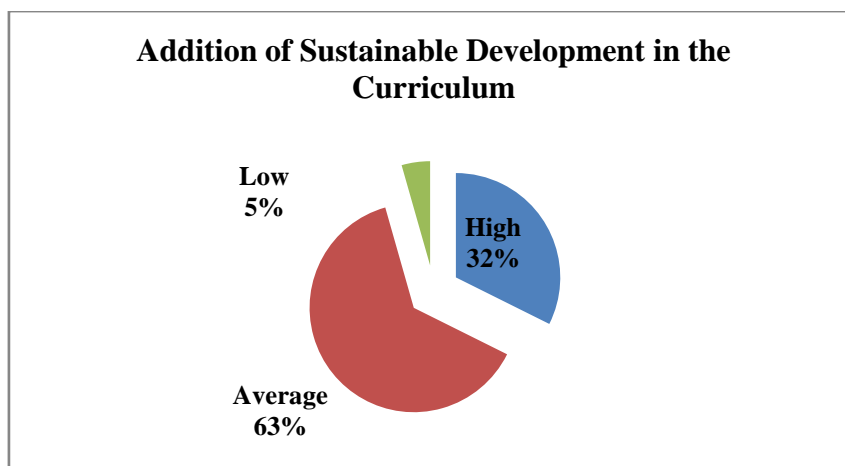


Fig.-2: Response of Pupil Teachers for Addition of SD in the Curriculum

Fig.-2 presents the response of pupil teachers for inclusion of Sustainable Development in the Curriculum. Most of the pupil teachers responded that it should be included in the curriculum of B.Ed. course, 32% of them reported high acceptance while 5% of pupil teachers reflected low level of agreement (fig.-2).

S.N.	Areas	Yes %	No%	No idea %
1.	Need of courses for pupil teachers related to sustainable development	82.35	13.25	4.41
2.	Need of training related to sustainable development for pupil teachers	88.23	5.88	5.88
3.	Sustainable development should be added in curriculum as a compulsory topic	72.06	8.82	19.11

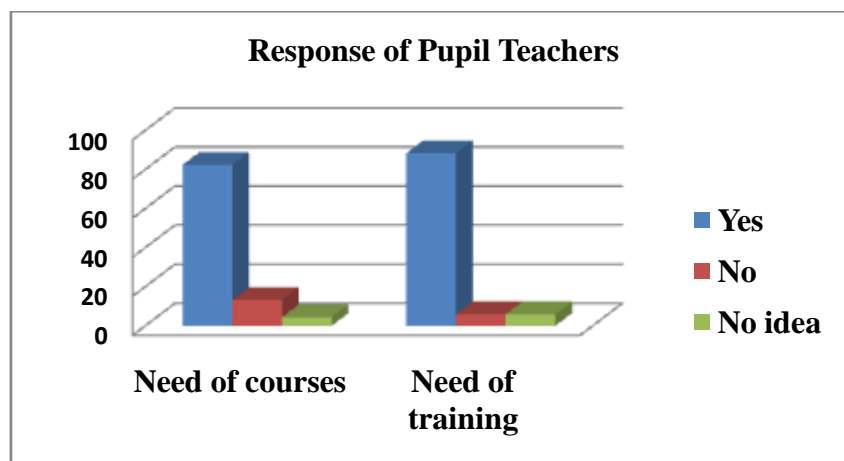


Fig.-3: Response of Pupil Teachers for Need of Course & Training in SD

Fig.-3 reflects that most of the pupil teachers replied that training is needed in ESD and courses are required for the same.

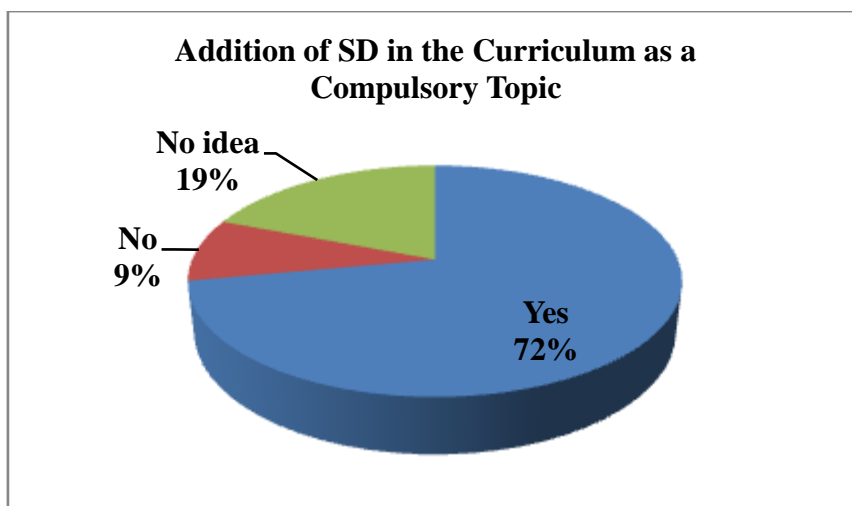


Fig.-4: Response of Pupil Teachers for Addition of SD in the Curriculum as a Compulsory Topic

Most of the teachers answered that sustainable development should be necessarily added in the curriculum (fig.-4).

Barriers in teacher education institution for the development of sustainable development

S.N.	Barriers	Response %
1.	Lack of student’s interest	20.59
2.	Lack of faculty member’s knowledge about the topic of sustainability	20.59
	Lack of propagation for sustainability concepts	44.11
	Lack of financial sources	14.71
	Other reasons	0

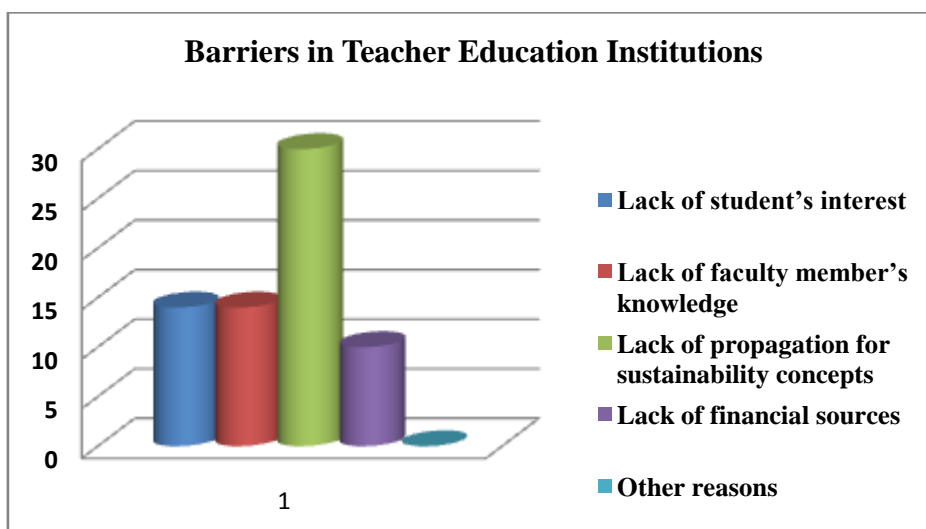


Fig.-4: Response of Pupil Teachers for Barriers in Teacher Education Institutions

Fig.-5 shows that main barrier in teacher education institutions for ESD is the lack of propagation for sustainability concepts followed by lack of student's interest and faculty member's knowledge on the topic whereas, lack of financial sources has minor influence.

Discussion:

ESD calls for a paradigm shift in education from 'teaching' to 'learning' (Sarabhai, 2005), from transmission to transaction or even transformation. The UNDESD is an opportunity for India to reorient its teacher education system and infuse concepts, understandings and good practices of sustainable development there by making teacher education work for sustainability (Ravindranath, 2007).

Environment education is needed about for the knowledge and awareness environmental problems. One pupil teacher believes that since western culture has been adapted by us environmental problems have started increasing. That is why we should adapt to our own culture as much as possible at our own level. Such issues should be included in the curriculum by which students can learn and understand their own culture and can respect it. There is a small example related to Indian culture, in Indian culture Banyan tree is worshipped. This is an ancient tradition. It is a symbol of our religious belief and somehow it is related to environment. By worshipping tree means now no one will harm the tree. This religious belief is benefitting environment indirectly. By adapting such tradition and rituals of our culture, we can conserve our environment. Students can be made aware about the environment and culture by developing such values in them.

Teacher should perform a role of an-ideal personality. So that students can follow him. Such examples should be included in curriculum, which can create some sensitivity among students towards sustainable development. For example:-the Chipko Movement of Gora Devi and Biological movement of Vandana shiva can motivate students.

Role of women and teacher is more prominent in value education. Teacher can develop required values in the students. He should develop his personality in such a way that he can inspire his students. The most important role in the development of values is of women. She is the first teacher to a child. She is the one who develops values in a child. She can develop good habits in a child right from the beginning.

From the result, it can be interpreted that in ancient times, man used to live in accordance with nature, therefore, a balance was maintained in environment. But now, there are so many problems for which pupil teachers should be trained for ESD. Pupil teachers have emphasized the role of environment and van panchayat, and government should aware them accordingly. Pupil teachers have shown sensitivity towards the farmers especially they are concerned

about the suicidal aspect of farmers. For the need of education for sustainable development, they responded that resources are being misused in large amount. Emotional bond should be developed between nature and students. Solar energy, wind energy should be used, bio-diversity should be conserved and bio production should be promoted.

In response to role of teacher in ESD, pupil teachers were of the view that teachers should be an ideal personality and make maximum efforts at his/her level. They further replied that schools can play significant role in promoting ESD and students should be developed as a miniature of environment. For Society, they responded that education and knowledge related to sustainable development should be given by government representative in the meetings of van panchayat. Pupil teachers have viewed that women have significant role, they should be informed accordingly so as to inculcate good habits in children. They responded that it should be included in the curriculum and experimental and practical knowledge should be given. Training is required to know about the natural resources and to know the skills associated with it. They emphasized to know about critical thinking, communication, creative thinking, collaboration, constructive and problem solving approach. They required to know sustainable development, education for sustainable development, objectives of ESD, skills for ESD and pedagogy for ESD. Responses of pupil teachers are categorized into eight dimensions environmental, political, cultural, economical, social, knowledge, skills and capacity building for ESD.

Further, 100% of pupil teachers realized the importance of sustainable development for a teacher. 96% accepted that it should be an important component of the curriculum. 88% responded that training is needed for pupil teachers related to sustainable development while, 82 % opined that courses are needed for pupil teachers related to sustainable development and 72 % replied that it should be added in curriculum as a compulsory topic. While discussing the barriers in teacher education institution for the development of sustainable development, it was found that lack of propagation for sustainability concepts is the main cause followed by lack of student's interest and faculty member's knowledge on the topic.

Conclusion

According to the pupil teachers, training is required in almost all the aspects of ESD. Most of the students emphasized on local relevancy of ESD. According to them, ESD can be promoted by local development and by adopting local culture. According to majority of students, the biggest hurdle in the development of ESD in teacher training institutions is the lack of propagation programs for sustainability concept. This obstacle can be removed if workshops and programs related to ESD in teacher training institutions would be organized.

It is concluded that training to pupil teachers for ESD is needed for which a course should be developed.

Students were not much aware of most of the goals given by UNESCO. Students did not respond very actively on the issues like gender equality, global participation and justice for all. Training is required to aware pupil teachers about these goals. There are many areas in which training can be given to pupil teachers. University, colleges, society and government should organize such programs and modify their curriculum in the light of ESD, so that pupil teachers can have knowledge and skills about all the aspect of ESD and they can be able to act as change agent for sustainable society.

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